

ABSTRACT OF THE DISCLOSURE

An embodiment of the invention is a Schottky diode 22 having a semiconductor substrate 3, a first metal 24, a barrier layer 26, and second metal 28. Another embodiment of the invention is a method of manufacturing a Schottky diode 22 that includes providing a semiconductor substrate 3, forming a barrier layer 26 over the semiconductor substrate 3, forming a first metal layer 23 over the semiconductor substrate 3, annealing the semiconductor substrate 3 to form areas 24 of reacted first metal and areas 23 of un-reacted first metal, and removing selected areas 23 of the un-reacted first metal. The method further includes forming a second metal layer 30 over the semiconductor substrate 3 and annealing the semiconductor substrate 3 to form areas 28 of reacted second metal and areas 30 of un-reacted second metal.